

PLATYPILUMNUS SOELAE, A NEW SPECIES OF GONEPLACID CRAB FROM THE NORTH WEST SHELF OF AUSTRALIA (CRUSTACEA: DECAPODA: BRACHYURA)*

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ABSTRACT

Platypilumnus soelae sp. nov. is described from specimens taken in from 178 to 454m from the North West Shelf of Australia. The new species is differentiated from *P. gracilipes* Alcock, 1894, Andaman Sea, and from *P. inermis* Guinot, 1985, Réunion Island, western Indian Ocean.

KEYWORDS: Brachyura, Crustacea, Decapoda, goneplacid crab, Australia, North West Shelf, Indian Ocean, benthic fauna, barnacle.

INTRODUCTION

Based primarily on the R.V. "Soela", the Fisheries Division of the Commonwealth Scientific and Industrial Research Organization (C.S.I.R.O.) conducted a detailed survey of the benthic fauna of the Australian North West Shelf (N.W.S.) slope, from off Dampier to the Bonaparte Archipelago, in depths of 300-700m (some less), using trawls, epibenthic sledges, dredges, and other gear. These operations, conducted in March-April 1982 and in January-February 1984, produced a wealth of information on this little studied area, including many records of crustaceans and other invertebrates new to the Australian fauna.

Among crustacean material collected from deeper offshore areas were several medium-sized grapsoid or catometopous crabs that attracted attention. These were sent to the author for identification by Dr A.J. Bruce of the Northern Territory Museum of Arts and Sciences (NTM). At first believed to be *Platypilumnus gracilipes* Alcock (1894: 401), described from a single female from the Andaman Sea, they were subsequently found to be distinguishable from Alcock's species, using the same criteria employed by Guinot, 1985 in distinguishing *P. inermis* (Guinot, 1985: 16, Pl. 2, Figs E-J) from Réunion Island in the western Indian Ocean. Illustrations are by Matilde Méndez G.

SYSTEMATICS

Platypilumnus soelae sp. nov.

(Figs 1, 2)

Type material. HOLOTYPE ♂, Stn. NWS-29, T/3, 17°55.5'S, 118°19.5'E, 450-454m, 27 January 1984, NTM Cr. 000588. PARATYPES - 1 ♂, Stn. NWS-63, 14°44.0'S, 121°32.2'E, 409m, 12 February 1984, AHF type number 481: 1 ♂, Stn. NWS-64, 14°49.4'S, 121°32.3'E, 178m, 12 February 1984, NTM Cr. 002024.

Measurements. NTM Cr. 000588: CL 24.0mm, CB 27.4mm; AHF 481: CL 30.7mm, CB 35.5mm; NTM Cr. 002024: (largest) CL 33.0mm, CB 39.4mm, LC 48.0mm, LD 28.8mm, HP 23.0mm. (LC length of chela; LD length of dactyl; HP height of palm).

Description. Carapace depressed, very flat, areas distinctly defined, surface finely granulose. Anterolateral margin bearing numerous spiniform teeth, flanked by spinules; posterolateral margin spinulose anteriorly, tuberculate posteriorly. Front lamellate, advanced, bimarginate, free margin spinulate, spinule at external angle not larger than others; lower frontal margin with three spinules on either side of a broad U-notch. Supraorbital margin with three or four spinules on either side of fissure. Subhepatic and pterygostomian regions swollen.

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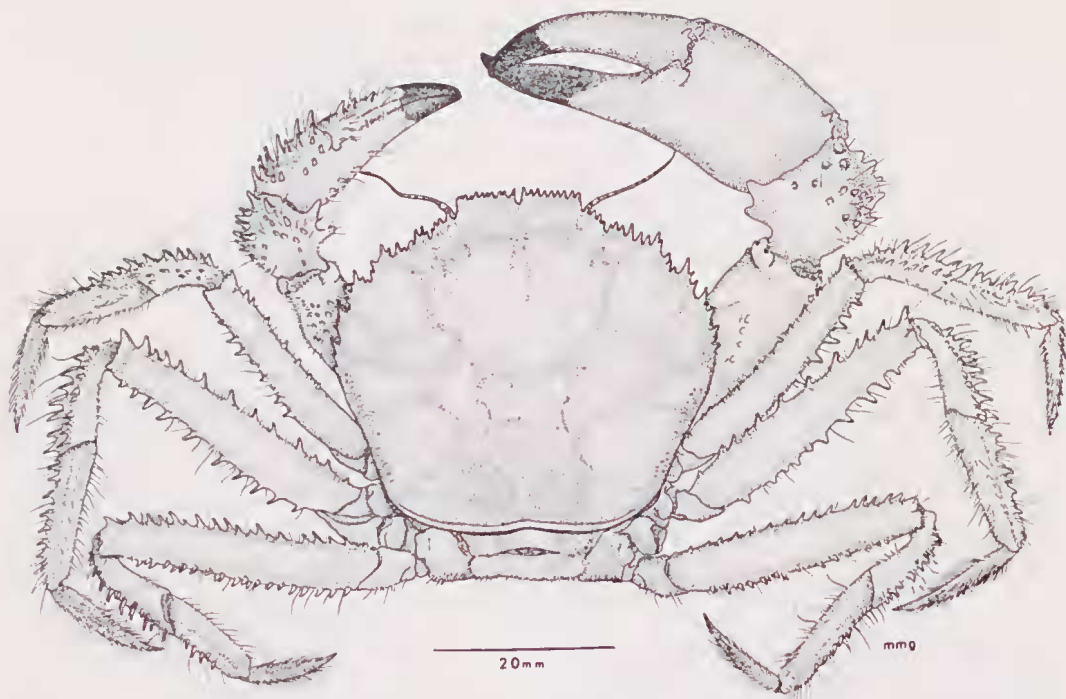


Fig. 1. *Platypilumnus soelae* holotype ♂, dorsal view.

Major chela of male grossly enlarged, inner surface smooth, bulging at center, outer surface smooth and bare except for a few scattered sharp granules proximally; palm high, lower border obtusely angled, fixed finger with lower margin straight, tip sharply upturned, recurving; dactyl long, slender, straight, tip downturned, tips crossing, their brownish colour extending inward along margins of gape; a low tooth at midpoint on pollex, dactyl weakly denticulate. Minor chela much smaller, spinulate, fingers long, thin, not crossing at extremity.

Walking legs long and slender, bearing spines on superior and inferior margins of merus and on superior margin of carpus and propodus.

Male abdomen composed of seven distinct segments. No portion of sternite 8 visible at level of coxa of pereopod 5.

Pleopod 1 of male nearly straight, apex scarcely narrowed, opening distally.

Pleopod 2 of male longer than pleopod 1, flagellum elongate, recurved at extremity.

Remarks. The new species can be distinguished from its congeners, *P. gracilipes* Alcock, 1894 and *P. inermis* Guinot, 1985, as follows:

1. The front has 7 or 8 spinules on each side, instead of 5 in *P. gracilipes* and granules only in *P. inermis*.
2. The lower margin of the front has a narrow U-shape and one or more spinules on either side.
3. The supraborbital border has 4 spines internal to and 3 spines external to the median notch, plus a larger exorbital spine, instead of 2 plus 3 plus the exorbital in *gracilipes* and 2 plus 2 and spinules plus the exorbital in *inermis*.
4. Anterolateral spines 2-5 (= 1-4 of Guinot) are not much larger than the supplementary spinules, giving the appearance of continuous but irregular spinulation.
5. The inner surface of the minor chela of the male lacks the cluster of spinules on the inner surface at midpoint of the female in *gracilipes* (of which the male is unknown, as is the female of *soelae*).
6. The flagellum of the male pleopod 2 lacks the cluster of spinules at midpoint shown for *P. inermis* (Guinot, 1985, Fig. 2H).

For those having access to Guinot, 1985, the following detailed comparisons of points 1-4 above, in which reference is made to num-

bered illustrations for *P. gracilipes* and *P. inermis* corresponding to those given here for *P. soelae*, should be useful:

1. The front, bimargined in all three species, is armed, on the free superior margin, with about five spiniform teeth on either side in *P. gracilipes* (Guinot, Fig. 2A); this margin is only crenulate with a spine
2. The inferior frontal margin bears two median spines, separated by a narrow, U-shaped notch in *P. gracilipes* (Guinot,

at each latero-external angle in *P. inermis* (Guinot, Fig. 2B); whereas it is furnished with numerous (8 to 10 on each side) blunt teeth of equal size in *P. soelae* (Fig. 2A, herewith).

2. The inferior frontal margin bears two median spines, separated by a narrow, U-shaped notch in *P. gracilipes* (Guinot,

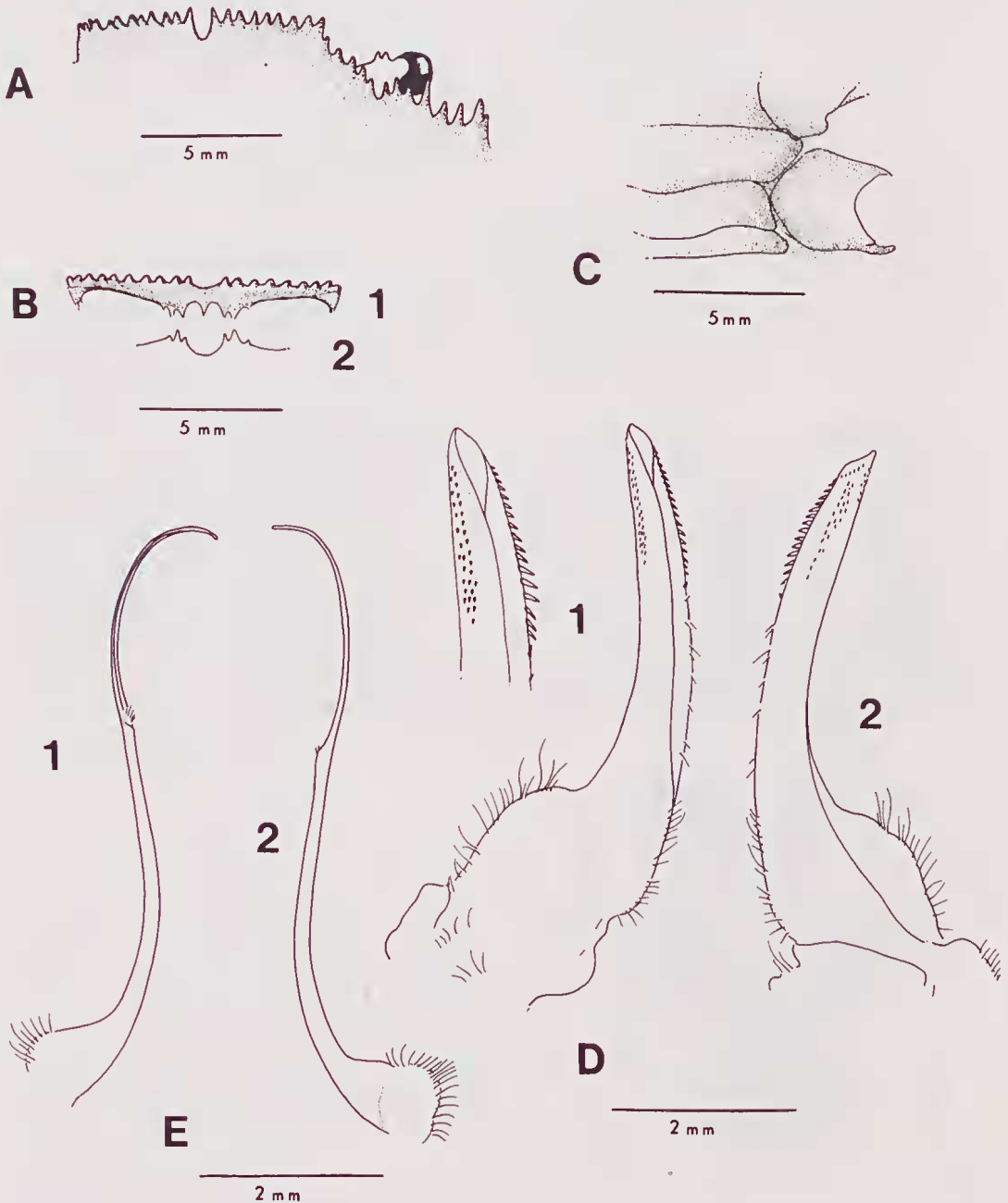


Fig. 2. *Platypilumnus soelae* holotype ♂: A, front, dorsal view; B, front, 1, frontal view, 2, same, ventral view; C, abdomen at level of 5th pereopod; D, first pleopod, 1, anterior view, 2, same, posterior view; E, second pleopod, 1, anterior view, 2, same, posterior view.

Fig. 2C2); these spines are more widely spaced in *P. inermis* (Guinot, Fig. 2D2); whereas these spines, again narrowly spaced, are each accompanied by a spinule on either side in *P. soelae* (Fig. 2B2, herewith).

3. The supraorbital margin is split by a notch flanked on the inner side by two spines, and on the outer side by three spines, followed by a fourth spine behind the orbital angle preceding the first large anterolateral spine in *P. gracilis* (Guinot, Fig. 2A); the supraorbital margin bears four long spines (two on each side of the fissure) and only very small spinules in front of the first large anterolateral spine in *P. inermis* (Guinot, Fig. 2B); there are four small spinules on the inner side of the median notch, three spinules outside the median notch, followed by the exorbital spine, followed by two more spinules inside the first anterolateral spine, in *P. soelae* (Fig. 2A, herein).
4. If the exorbital spine be considered the first anterolateral as in previous work by this writer, the first anterolateral spine of Guinot (above) becomes the second anterolateral, making it possible to count 5 larger anterolateral spines, about which the spinules cluster, on each of the three specimens of *P. soelae*.

Although the smaller specimen, selected as the holotype, is in all respects "typical" of the species, on the two larger male paratypes

the number of frontal spines is reduced from as many as 8 to 10 to as few as 5 on each side of the median V, a condition resembling the Andaman Sea, rather than the Réunion Island, species. The fixed finger of the major chela is more strongly curved in the larger specimens. The dentition of the major chela, apparent in all three specimens, is not shown in the illustrations of the holotype. Mentioned in descriptions of *P. gracilis* and *P. inermis*, lepadomorph barnacles were attached to all specimens of *P. soelae*. These have been identified by William A. Newman, Scripps Institution of Oceanography, La Jolla, California, as belonging to a group represented by *Poecilasma (Temnaspis) excavatum* Hoek (1907).

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